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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/995,697
Filing Date: November 29, 2001
Appellant(s): KERR ET AL.

Jeffrey Measures (Reg. No. 40,272)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed Feb. 22, 2007 appealing from the Office action mailed Feb. 23, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Vahalia et al., U.S. Patent No. 5,933,603

<http://searchstorage.techtarget.com>, definition of the term Switch fabric

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-30 and 32-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Vahalia et al., U.S. Patent No. 5,933,603 (referred to hereafter as Vahalia).

As to claim 1, Vahalia teaches an apparatus for processing data streams comprising:

at least one producer of properly ordered substreams of a data stream (fig 16 shows a plurality of produced substreams);

potential consumers of a data stream (fig 16 shows a plurality of clients and stream servers); and

a stream fabric, coupled to the producer and the potential consumers, that operates to receive the substreams from the producer, store each substream within a stream queue associated with each data stream and select one of said plurality of potential consumers and output at least a portion of the data within the stream queue to the selected consumer (see col. 23 lines 55-col. 24 lines 62, clients request a stream to be routed, in response the controller determines and selects a stream server to fetch the requested content to).

As to claim 2, Vahalia teaches an apparatus of claim 1, wherein the stream fabric operating to output at least a portion of the data within the stream queue to a consumer of the stream queue comprises reading a consumer attribute for the stream queue to determine an assigned consumer of the stream queue and outputting a portion of the

data within the stream queue to the assigned consumer (see col. 23 lines 55-col. 24 lines 62).

As to claim 3, Vahalia teaches the apparatus of claim 1, Vahalia teaches selecting one of the potential consumers as a consumer for the stream queue based upon a predetermined criteria and outputting a portion of data within the stream queue to the selected consumer (see col. 23 lines 55-col. 24 lines 62).

As to claim 4, Vahalia teaches the apparatus of claim 3 wherein the predetermined criteria comprises a round robin system (see col. 11 lines 22-30).

As to claim 5, Vahalia teaches the apparatus of claim 1, wherein the predetermined criteria comprise determination of a least burdened potential consumer (see col. 23 lines 55-col. 24 lines 62).

As to claim 6, Vahalia teaches an apparatus of claim 1, wherein the stream fabric further operates to receive a control signal associated with the stream queue from the consumer of the stream queue (see col. 23 lines 55-col. 24 lines 62).

As to claim 7, Vahalia teaches an apparatus of claim 6, wherein the control signal comprises an indication of at least one consumer attribute for the stream queue (see col. 23 lines 55-col. 24 lines 62).

As to claim 8, Vahalia teaches an apparatus of claim 1, wherein the consumer attribute comprises the potential consumer that is assigned as the consumer of the stream queue (column 7 line 19-column 8 line 23).

As to claim 9, Vahalia teaches an apparatus of claim 6, wherein the consumer attribute comprises the number of bytes of the data within the stream queue that are to be output to the consumer of the stream queue (see col. 23 lines 55-col. 24 lines 62).

As to claim 10, Vahalia teaches an apparatus of claim 6, wherein the control signal comprises an indication of at least one attribute associated with the producer of the stream queue (see col. 23 lines 55-col. 24 lines 62).

As to claim 11, Vahalia teaches the apparatus of claim 6, wherein the control signal comprises an instruction to copy at least a portion of the data within the stream queue to the consumer of the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 12, Vahalia teaches the apparatus of claim 6, wherein the control signal comprises an instruction to forward at least a portion of the data within the stream queue to the consumer of the stream queue and to subsequently delete the portion of the data within the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 13, Vahalia teaches the apparatus of claim 6, wherein the control signal comprises an instruction to transfer at least a portion of the data within the stream queue to another stream queue within the stream (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 14, Vahalia teaches the apparatus of claim 1, wherein the producer is an Input/Output (I/O) element arranged to be coupled to a packet switched network (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 15, Vahalia teaches the apparatus of claim 14, wherein the I/O element operates to receive a flow of data packets, each of the data packets representing at least one segmented portion of the data stream; to terminate the layer 4 protocol within the received data packets; and to output properly ordered substreams of the data stream to the stream queue associated with the data stream (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 16, Vahalia teaches the apparatus of claim 15, wherein the I/O element operating to terminate the layer 4 protocol within the received data packets comprises removing the packet overhead from the received data packets, reordering the data within the received data packets into the proper order if necessary and requesting retransmission of any lost packets if necessary (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 17, Vahalia teaches the apparatus of claim 1, wherein the consumer of the stream queue is a processing element (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 18, Vahalia teaches the apparatus of claim 1 and claim 17, wherein the consumer of the stream queue is a content processing element that operates to receive the data output from the stream queue, process contents of the data received from the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 19, Vahalia teaches the apparatus of claim 1, wherein the at least one control signal comprises an instruction to change a consumer attribute of the

stream queue such that the consumer of the stream queue is changed to another one of the potential consumers (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 20, Vahalia teaches the apparatus of claim 1, wherein the other one of the potential consumers comprises an application processing element that operates to process the contents of the data received from the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 21, Vahalia teaches the apparatus of claim 20, wherein the a decryption element operates to decrypt the data received from the stream queue and output the decrypted data to a second stream queue within the stream fabric (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 22, Vahalia teaches the apparatus of claim 1, wherein the other one of the potential consumers comprises an Input/output (I/O) element coupled to a packet switched network, the I/O element operating to output the data within the stream queue to the packet switched network (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 23, Vahalia teaches the apparatus of claim 1, claim 17, claim 18, claim 19 and claim 22, Vahalia teaches adding a flow context identifier to the stream queue associated with the data stream (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 24, Vahalia teaches the apparatus of claim 1, claim 17 and claim 18, wherein the stream fabric comprises a plurality of stream queues and the content processing element is set as a default initial consumer of each of the stream queues within the stream fabric (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 25, Vahalia teaches the apparatus of claim 1, wherein the producer and one of the potential consumers are the same component (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 26, Vahalia teaches an apparatus for processing streams of data comprising: at least one producer of properly ordered substreams of a data stream (fig. 1, column 4 line 65 to column 5 line 24, the SAR engine is read as producer which has functions of segmentation of data stream and reassembly of data stream) ; a content processing element (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16); and a stream fabric, coupled to the producer and the content processing element, that operates to receive the substreams from the producer, store the substreams within a stream queue associated with the data stream and copy at least a portion of the data within the stream queue to the content processing element; wherein the content processing element operates to receive the data output from the stream queue, process contents of the data received from the stream queue and transmit at least one control signal to the stream fabric in response to the processing of the contents of the data (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 27, Vahalia teaches an apparatus of claim 26, Vahalia further teaches comprising at least one consumer of a data stream; and wherein the at least one control signal comprises an instruction for the stream fabric to forward further data from the stream queue to the consumer (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 28, Vahalia teaches an apparatus of claim 26 and claim 27, wherein the consumer comprises an application processing element that operates to process the contents of the data received from the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 29, Vahalia teaches an apparatus of claim 26 and claim 27, wherein the consumer comprises an Input/Output (110) element coupled to a packet switched network, the UO element operating to output the data within the stream queue to the packet switched network (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 30, Vahalia teaches a stream switch for directing, within a packet switched network, a data stream, the stream switch comprising: an interface, arranged to be coupled to the packet switched network, that operates to receive and process a flow of data packets from the packet switched network, each of the data packets representing at least one segmented portion of the data stream, and to output properly ordered substreams of the data stream (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16); and a content processing element that operates to receive a copy of at least a portion of the data within the stream queue, process contents of the data received from the stream queue and instruct the stream fabric to direct the data within the stream queue to a selected flow of packets within the packet switched network, via the interface, in response to the processing of the contents of the data (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 32, Vahalia teaches a method of processing a data stream comprising: producing properly ordered substreams of a data stream (see col. 23 lines

55-col. 24 lines 62 and fig. 10-16), producing segmentation of data stream and reassembly of data stream); storing each substream within a stream queue associated with each data stream within a switch fabric (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16); and outputting at least a portion of the data within the stream queue to a consumer of the stream queue, the consumer being one of a plurality of potential consumers (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 33, Vahalia teaches the method of claim 32, wherein the producing properly order substreams of a data stream comprises receiving a flow of data packets, each of the data packets representing at least one segmented portion of the data stream; and terminating the layer 4 protocol within the received data packets (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 34, Vahalia teaches the method of claim 32 and claim 33, wherein the terminating the layer 4 protocol within the received data packets comprises removing the packet overhead from the received data packets, reordering the data within the received data packets into the proper order if necessary and requesting retransmission of any lost packets if necessary (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 35, Vahalia teaches the method of claim 32, wherein the outputting at least a portion of the data within the stream queue to a consumer of the stream queue comprises processing contents of at least a portion of the data within the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16),

determining which of the potential consumers to select as the consumer for the stream queue based upon the contents of the at least a portion of the data within the stream queue and outputting at least a portion of the data within the stream queue to the selected consumer (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 36, Vahalia teaches an apparatus of claim 32 and claim 35, Vahalia further teaches processing the data received from the stream queue at the selected consumer of the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 37, Vahalia teaches the method of claim 36, wherein the a decryption element operates to decrypt the data received from the stream queue and output the decrypted data to a second stream queue within the stream fabric (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 38, Vahalia teaches an apparatus of claim 32, 35 and claim 36, wherein the processing the data received from the stream queue comprises outputting the data received from the stream queue to a packet switched network (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

As to claim 39, Vahalia teaches a method of processing a data stream comprising: producing properly ordered substreams of a data stream (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16);

storing the substreams within a stream queue associated with the data stream (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16);

processing contents within at least a portion of the data within the stream queue to determine one of a plurality of potential consumers to select as a consumer of the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16); and

outputting at least a portion of the data within the stream queue to the selected consumer of the stream queue (see col. 23 lines 55-col. 24 lines 62 and fig. 10-16).

(10) Response to Argument

Examiner summarizes the various points raised by the appellant and addresses replies individually.

The appellant argues that Vahalia does not disclose a “stream fabric” (see brief pages 10-14, argument A).

In reply to A, Vahalia teaches a system and method comprising a disk array 47, ICDA cache server 41 and a plurality of stream servers 91-94 (see fig. 9, 13 and 16). The disk array 47 stores a plurality of movies that are serviced to requesting clients. The ICDA cache server 47 caches a portion of the movies and routes portions of the movies to a plurality of stream servers 91-94 (see col. 20 lines 35-47). Since the disk array is the primary storage for the video data, the disk array is interpreted to be the "at least one producer". Also since the stream servers 91-94 are the devices that receive the data stream, examiner interprets the stream servers to be "plurality of potential consumers". The system also includes controller server 28 and 29 of fig. 3 that select schedule stream data to be transmitted to stream servers and also selects the stream server that is best suited to handle the request. Examiner interprets the controller server to be the "stream fabric" located between the "at least one producer" and "plurality of potential consumers".

Applicant argues that Vahalia does not disclose a stream fabric. Applicant defines a switch fabric as a "physical structure of a switch...physical/communications channels are interwoven from port-to-port" (see brief page 11 last paragraph"). In other words, a fabric is the physical structure and/or software used on a switch to connect one or more input ports to one or more output ports. Examiner points out that any server inherently includes a plurality of input ports and a plurality of output ports. Also a server acting as a switch on the network managing connections sessions or connections between devices on the network inherently allocates ports for input data and routes the data to a selected output port. Therefore, a server that acts as a switch on the network inherently includes a fabric. In addition, the controller server 29 in fig. 3 is shown to have at least two input ports and three output ports connected to different devices on the network. Therefore the controller server includes all the properties of a fabric and therefore examiner interprets the ICDA cache server as a "stream fabric".

The appellant argues that Vahalia does not disclose "selecting a consumer" feature of claim 1 (see brief page 14, argument B).

In reply to B, Vahalia teaches that the controller server receives a request from a client and determines the load on each of the stream servers (see col. 8 lines 37-41) and then selects a stream server to receive the stream so that the stream server may later on serve the stream to the client (see col. 8 lines 41-47). Therefore Vahalia teaches that the stream server "consumer" is selected by the controller server "stream fabric".

The appellant argues that Vahalia does not disclose "selecting a consumer of the stream queue by reading a consumer attribute for the stream queue" (see brief page 15 lines 7-14, argument C).

In reply to C, as explained in reply to B, the stream server selects the stream server "consumer" based on the load of the stream server. The load of the stream server is interpreted to be "consumer attribute" and therefore Vahalia teaches the limitation as claimed.

The appellant argues that Vahalia does not disclose selecting a consumer based on a predetermined criteria (see brief page 15 lines 16-25, argument D).

In reply to D, as explained in reply to B, the stream server selects the stream server "consumer" based on the load of the stream server. The load of the stream server is interpreted to be "predetermined criteria" and therefore Vahalia teaches the limitation as claimed.

The appellant argues that Vahalia does not disclose selecting the client based on a round robin scheme (see brief page 16 lines 1-5, argument E).

In reply to E, Vahalia teaches that the size of the requested file is determined, then the size of the available buffers are also determined, then a time for filling up the buffers is determined using a round-robin algorithm which is used to determine and select the stream server to receive the stream (see col. 15 lines 47-64 and col. 11 lines 22-30).

The appellant argues that Vahalia does not disclose determining a least burdened consumer (see brief page 15 lines 6-12, argument F).

In reply to F, as explained in reply to B, the stream server selects the stream server "consumer" based on the load of the stream server. The stream server with the least load is selected (see col. 8 lines 41-54).

The appellant argues that Vahalia does not disclose sending a signal with an indication of at least one consumer attribute (see brief page 17 lines 1-8, argument G).

In reply to G, as discussed previously, the stream server is selected based on the load on the stream server, i.e. "consumer attribute".

The appellant argues that Vahalia does not disclose receiving a signal that indicates the potential consumer that was selected as the consumer for the stream queue (see brief page 17 lines 10-25, argument H).

In reply to H, Vahalia teaches that the controller server selects the stream server to receive the stream and then sends a scheduling command to the ICDA cache to transmit the stream (see col. 8 lines 33-40). The scheduling command sent to transmit the stream is interpreted to be "signal that indicates the potential consumer was selected".

The appellant argues that Vahalia does not disclose indicating the number of bytes to be output to the consumer (see Brief page 18 lines 1-5, argument I).

In reply to I, Vahalia teaches determining the size of the file that was requested and based on the size of the file, i.e. "number of bytes", detects the memory available for allocation at the stream servers, and selects a stream server to receive the stream (see col. 15 lines 27-41).

The appellant argues that Vahalia does not disclose deleting the data which was forwarded to the consumer (see brief page 18 lines 20-25, argument J).

In reply to J, Vahalia teaches that the stream that is to be transmitted to a stream server is only fetched at the ICDA server only for a short period of time. The data is fetched no more in advance of the delivery of the data to transmit the stream in the scheduled time (see col. 20 lines 14-34). Therefore the data is deleted once a new request for different data is received and also the data is only fetched just in enough time to deliver the data within the requested time window because of limited available memory space.

The appellant argues that Vahalia does not disclose transferring a portion of the data within the stream queue to another stream queue in the fabric (see brief page 19 lines 6-10, argument K).

In reply to K, Vahalia teaches the requested data may have multiple segments and that each segment may be transferred using a different queue (see col. 20 lines 35-67 and col. 19 lines 51-col. 20 lines 3).

The appellant argues that Vahalia does not disclose decrypting the received stream (see brief page 21, argument L).

In reply to L, Vahalia teaches transmitting encoded movies over a network where the receiver displays the encoded movie (see col. 23 lines 19-54). Since the movie is encoded, the movie is inherently decoded or decrypted before being displayed.

The appellant argues that Vahalia does not disclose adding a flow context identifier to the flow (see brief page 22, argument M).

In reply to M, Vahalia teaches that the system and method may add priorities w1, w2 and w3 to the video frames (see col. 12 lines 10-25). The priority added to the frames is interpreted to be "flow context identifier".

The appellant argues that Vahalia does not disclose remove the overhead from packets (see brief page 26, argument N).

In reply to N, Vahalia teaches receiving a movie file over a network transmitted as frames. The frames are then received and decoded and displayed. It is well known in the art that the frames are received at network layer 3 or 4. The packet or frame would consist of a packet header and payload information. The packet header information includes information such as source address, destination address and protocol information. The payload information includes the actual data that is decoded and displayed. It is very well known in the art that in order for an application to decode and display the received frames such as the video frames taught by Vahalia, the application that displays the video data inherently removes the header information and only uses the payload information to display the selected video. Therefore Vahalia inherently teaches removing overhead from packets.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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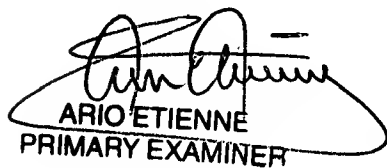
For the above reasons, it is believed that the rejections should be sustained.

Hussein Elchanti

Feb. 12, 2008

Conferees:

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